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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,168	09/10/2003	Joy Sawyer Bloom	AD6929 US NA	3753

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E I DU PONT DE NEMOURS AND COMPANY
LEGAL PATENT RECORDS CENTER
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WILMINGTON, DE 19805

EXAMINER	
HON, SOW FUN	
ART UNIT	**PAPER NUMBER**
1772	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/659,168	BLOOM, JOY SAWYER	
	Examiner	Art Unit	
	Sow-Fun Hon	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11 and 13* is/are allowed.

6)☒ Claim(s) *7-10, 12, 14-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/08/06 has been entered.

Response to Amendment

Withdrawn Rejections

2. The 35 U.S.C. 102(b) rejection of claims 7-10, 12, as being anticipated by Tsutsumi, is withdrawn due to Applicant's amendment dated 12/08/06.

New Rejections

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 7-9, 12, 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi (US 5,312,866) in view of Maeda (US 6,432,323).

Regarding claim 7, Tsutsumi teaches a composition comprising a liquid crystalline polyester (LCP) (polyester resin which is a thermotropic liquid-crystal

polymer, column 4, lines 40-50) as a matrix material (50% by weight of polyester resin, column 3, lines 65-70); having a melting temperature of greater than 399°C (can form an anisotropic molten phase at a temperature of 420°C, column 4, lines 42-50). Note that the limitation of "having a melting temperature" does not preclude the existence of other melting temperatures. Tsutsumi teaches the addition of one or more additives from the group consisting of three members, namely fluoropolymer (fluororesin, column 3, line 19), graphite and aramid (aromatic polyamide resin, column 3, line 20), remarkably improves the sliding property and dimensional heat stability of the composition (column 3, lines 20-24), wherein the addition of carbon fibers or potassium titanate fibers, remarkably improves the mechanical properties of the composition (column 3, lines 28-35). Said fillers are defined lubricating fillers by Applicant's disclosure (original claim 4). Tsutsumi recites a molding resin composition which comprises resins and other additives such as fluororesin, graphite, carbon fibers, aromatic polyamide fibers, potassium titanate fibers and a crystallization accelerator (abstract), wherein said resins comprise a liquid crystalline polyester which has a melting temperature of greater than or equal to 399 °C (can form an anisotropic molten phase at a temperature of 420 °C, abstract). This recitation means that the composition of Tsutsumi can contain at least five lubricating fillers as defined by Applicant's specification, namely the graphite, carbon fibers, potassium titanate fibers, fluoropolymer and aramid (fluororesin, aromatic polyamide, page 3, lines 24-27), which is within the claimed range of at least three generic lubricating fillers selected from the group of specific members. Tsutsumi teaches that the lubricating filler is present in the

amount of from 1-25% (solid lubricant include PTFE, graphite, is usually from 1 to 25 parts by weight of the sum of the polyimide resin and the thermotropic liquid crystal polymer, column 20, lines 27-40), wherein the upper limit of 25% meets the lower limit of the claimed range of at least 25% for the total amount of lubricating fillers, by weight of the composition. Tsutsumi fails to teach a specific example whereby the composition comprises a specific combination wherein the three lubricating fillers comprise (a) the first lubricating filler in an amount of from 1-20% by weight of the composition; (b) the second lubricating filler in an amount of from 1-30% by weight of the composition; and (c) the third filler in an amount of from 1-20% by weight of the composition.

However, Tsutsumi teaches that the lubricating filler is present in the amount of from 1-25% by weight of the composition (solid lubricant include PTFE, graphite, is usually from 1 to 25 parts by weight of the sum of the polyimide resin and the thermotropic liquid crystal polymer, column 20, lines 27-40), wherein at least three lubricating fillers are blended together for the purpose of providing the desired combination of lubricating properties during processing and physical properties for the end product (sliding properties, mechanical properties and dimensional stability of molded article, column 3, lines 18-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have optimized the process of making the composition to obtain one comprising the at least three lubricating fillers comprising (a) the first lubricating filler in an amount of from 1-20% by weight of the composition; (b) the second lubricating filler in an amount of from 1-30% by weight of the composition; and

(c) the third filler in an amount of from 1-20% by weight of the composition, wherein said first, second and third lubricating fillers comprise 25% by weight of the composition, in order to provide the desired combination of lubricating properties during processing and physical properties for the end product, as taught by Tsutsumi.

In addition, Tsutsumi teaches that the composition is for molding (abstract), but fails to teach that the molding composition comprises the LCP in an amount within the claimed range of from 45 to about 75% by weight in addition to the fillers blended in with the polyimide part of the matrix material.

However, Maeda teaches a molding composition (column 1, lines 13-20), comprising LCP is present as the major component of the matrix resin, in the amount of 60 to 91% by weight when the filler is present (carbon fiber amount of from 10 to 70 parts by weight of liquid crystal polyester resin, column 5, lines 60-67), which overlaps the claimed range of from 45 to about 75% by weight, for the purpose of providing the desired balance of lubrication and mechanical strength (plasticization, column 5, lines 60-67), wherein the polyimide resin is present in only a small amount (column 6, lines 32-40). Maeda teaches that LCP excels in heat-resistance as well as processibility in the melt to provide precision molding (column 1, lines 13-20),

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have increased the LCP in the composition of Tsutsumi, to an amount that is within the range of 45 to about 75% by weight, in order to obtain the desired balance of lubrication and mechanical strength, combined with

excellent heat-resistance and processibility in the melt for precision molding, as taught by Maeda.

Furthermore, Tsutsumi teaches that the LCP has repeat units derived from 4-hydroxybenzoic acid (structural unit formula (V), column 16, lines 40-45), 4,4'-biphenol (structural unit formula (VI), column 16, lines 46-51), terephthalic acid (structural unit formula VII, column 16, lines 52-56) and 2,6-napthalenedicarboxylic acid (structural unit formula VIII, column 16, lines 57-62) disclosed by Applicant's specification (original claim 3), and that it has an anisotropic molten phase at a temperature of 420 °C (column 4, lines 42-50). A chemical composition and its properties are inseparable. If the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01. Therefore the composition of Tsutsumi as modified by Maeda, as discussed above, is expected to have a good wear resistance at conditions of at least 1.75 MPa-m/s (50,000 psi-fpm).

Regarding claims 8-9, Tsutsumi teaches that the composition can contain lubricating fillers including carbon fiber, mica and graphite (column 20, lines 42-50) for the purpose of combining the lubricating and mechanical properties of each component. In addition, Tsutsumi teaches that the composition further comprises an additional filler (low friction cured phenolic resin, column 19, lines 25-30, particle, column 19, lines 47-52), in the amount of 3 to 50% by weight (parts by weight, column 20, lines 13-24), for the purpose of providing the desired wear resistance (column 20, lines 14-20), which encompasses the claimed range of 1-15% by weight. Although the graphite is not listed as the first filler, the carbon fiber is not listed as the second filler, the mica is not listed

as the third filler, and the additional filler is not listed as the fourth filler by Tsutsumi, the qualifier of "at least" in preceding the "three lubricating fillers", along with the overlapping/matching amounts of 1-20% by weight of first filler, 1-30% by weight of second filler and 1-20% by weight of third filler, as recited in present parent claim 7, and 1-15% by weight of a fourth filler, as recited by dependent claim 9, provides for the interchange of the labels of "first filler", "second filler", "third filler", and "fourth filler".

Regarding claim 12, Tsutsumi teaches that an article is made from the composition (column 2, lines 60-70).

Regarding claims 14, 16, Tsutsumi teaches a composition comprising a liquid crystalline polyester (LCP) (polyester resin which is a thermotropic liquid-crystal polymer, column 4, lines 40-50) as a matrix material (polyester resin, column 3, lines 65-70); which has a melting temperature of greater than 399°C (can form an anisotropic molten phase at a temperature of 420°C, column 4, lines 42-50). Note that the limitation of "having a melting temperature" does not preclude the existence of other melting temperatures. Tsutsumi teaches the addition of one or more additives from the group consisting of three members, namely fluoropolymer (fluororesin, column 3, line 19), graphite and aramid (aromatic polyamide resin, column 3, line 20), remarkably improves the sliding property and dimensional heat stability of the composition (column 3, lines 20-24), wherein and the addition of carbon fibers or potassium titanate fibers, remarkably improves the mechanical properties of the composition (column 3, lines 28-35). Said fillers are defined lubricating fillers by Applicant's disclosure (original claim 4). Tsutsumi recites a molding resin composition which comprises resins and other

additives such as fluororesin, graphite, carbon fibers, aromatic polyamide fibers, potassium titanate fibers and a crystallization accelerator (abstract), wherein said resins comprise a liquid crystalline polyester which has a melting temperature of greater than or equal to 399 °C (can form an anisotropic molten phase at a temperature of 420 °C, abstract). This recitation means that the composition of Tsutsumi can contain at least five lubricating fillers as defined by Applicant's specification, namely the graphite, carbon fibers, potassium titanate fibers, fluoropolymer and aramid (fluororesin, aromatic polyamide, page 3, lines 24-27), which is within the claimed range of at least two generic lubricating fillers selected from the group of specific members. Tsutsumi teaches that the lubricating filler is present in the amount of from 1-25% (solid lubricant include PTFE, graphite, is usually from 1 to 25 parts by weight of the sum of the polyimide resin and the thermotropic liquid crystal polymer, column 20, lines 27-40), wherein the upper limit of 25% meets the lower limit of the claimed range of at least 25% for the total amount of lubricating fillers, by weight of the composition. In addition, Tsutsumi teaches that the composition is for molding (abstract), but fails to teach that the molding composition comprises the LCP in an amount within the claimed range of from 45 to about 75% by weight in addition to the fillers blended in with the polyimide part of the matrix material.

However, Maeda teaches a molding composition (column 1, lines 13-20), comprising LCP is present as the major component of the matrix resin, in the amount of 60 to 91% by weight when the filler is present (carbon fiber amount of from 10 to 70 parts by weight of liquid crystal polyester resin, column 5, lines 60-67), which overlaps

the claimed range of from 45 to about 75% by weight, for the purpose of providing the desired balance of lubrication and mechanical strength (plasticization, column 5, lines 60-67), wherein the polyimide resin is present in only a small amount (column 6, lines 32-40). Maeda teaches that LCP excels in heat-resistance as well as processibility in the melt to provide precision molding (column 1, lines 13-20),

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have increased the LCP in the composition of Tsutsumi, to an amount that is within the range of 45 to about 75% by weight, in order to obtain the desired balance of lubrication and mechanical strength, combined with excellent heat-resistance and processibility in the melt for precision molding, as taught by Maeda.

Regarding claim 15, Tsutsumi teaches that the LCP has repeat units derived from 4-hydroxybenzoic acid (structural unit formula (V), column 16, lines 40-45), 4,4'-biphenol (structural unit formula (VI), column 16, lines 46-51), terephthalic acid (structural unit formula VII, column 16, lines 52-56) and 2,6-napthalenedicarboxylic acid (structural unit formula VIII, column 16, lines 57-62)

Regarding claim 17, Tsutsumi in view of Maeda, fails to teach a specific example whereby the composition comprises the LCP in the amount within the claimed range of 45 to about 75% by weight, and the two generic lubricating fillers which comprise (a) the first lubricating filler in an amount of from 1-20% by weight of the composition; (b) the second lubricating filler in an amount of from 1-30% by weight of the composition.

However, Tsutsumi teaches that the lubricating filler is present in the amount of from 1-25% by weight of the composition (solid lubricant include PTFE, graphite, is usually from 1 to 25 parts by weight of the sum of the polyimide resin and the thermotropic liquid crystal polymer, column 20, lines 27-40), wherein at least two lubricating fillers are blended together for the purpose of providing the desired combination of lubricating properties during processing and physical properties for the end product (sliding properties, mechanical properties and dimensional stability of molded article, column 3, lines 18-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have optimized the process of making the composition of Tsutsumi in view of Maeda, to obtain one comprising the LCP in the amount within the range of 45 to about 75% by weight, and at least two generic lubricating fillers which comprise (a) the first lubricating filler in an amount of from 1-20% by weight of the composition; and (b) the second lubricating filler in an amount of from 1-30% by weight of the composition, wherein said first and second lubricating fillers comprise 25% by weight of the composition, in order to provide the desired combination of lubricating properties during processing and physical properties for the end product, as taught by Tsutsumi.

Regarding claim 18, Tsutsumi teaches that the composition can further be blended with other lubricating fillers including carbon fiber and graphite (column 20, lines 42-50) for the purpose of combining the lubricating and mechanical properties of each component. Although the graphite material is not listed as the first filler, and the

carbon fiber is not listed as the second filler, the qualifier of "at least" in preceding the limitation of "two lubricating fillers", along with the overlapping/matching amounts of 1-20% by weight of first filler and 1-30% by weight of second filler, as recited in present parent claim 14, provides for the interchange of the labels of "first filler" and "second filler".

Regarding claim 19, Tsutsumi teaches that an article is made from the composition (column 2, lines 60-70).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi in view of Maeda as applied to claims 7-9, 12, 14-19 above, and further in view of Long (US 6,348,163).

Tsutsumi teaches the composition comprising LCP as a matrix material in an amount within the range of from 45 to about 75% by weight, and at least three lubricating fillers comprising: (a) a first lubricating filler of graphite in an amount within a range of from 1 - 20% by weight of the composition; (b) a second lubricating filler of carbon fiber in an amount within a range of from 1 - 30% by weight of the composition; (c) a third lubricating filler of mica in an amount within a range of from 1 - 20% by weight of the composition, wherein said first, second and third lubricating fillers together comprise at least 25% by weight of the composition, the composition having a melting temperature of greater than or equal to 399 °C and at least good wear resistance at conditions of at least 1.75 MPa-m/s (50,000 psi- fpm), as discussed above. While Tsutsumi teaches a generic fourth filler in an amount within the range of 1-15% by

weight of the composition, as discussed above, and that it can be a polyimide resin (column 20, lines 50-56), Tsutsumi fails to teach that the polyimide is in particulate form.

However, Long teaches a composition containing LCP (column 6, lines 60-65) that can comprise polyimide as a filler, which has heat resistance and high strength (column 7, lines 27-29). Long teaches that the filler can be in either fibrous or particulate form, depending on the intended use of the material (column 7, lines 1-2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided the polyimide filler in the composition of Tsutsumi, in a particulate form, in order to utilize the physical properties provided by the particulate form, to meet the end use, as taught by Long.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Long83 (US 5,969,083) in view of Long63 (US 6,348,163), Maeda (US 6,432,323) and Tsutsumi (US 5,312,866).

Long83 teaches a molding composition comprising a liquid crystalline polyester (LCP) as a matrix material (column 1, lines 28-35) wherein said composition has an onset of melting temperature of at least 320 °C (Tm = 371 °C, 375 °C, Composition # 1, 11, Table 1, column 11, lines 55-67), and wherein said liquid crystalline polyester material comprises at least two fillers or more (in combination of two or more, column 6, lines 40-45), and can consist of (A) graphite (column 16, lines 20-30); (B) carbon fiber (column 16, lines 15-20); (C) mica (column 16, lines 30-31); and (D) fibrous polyimide (column 16, lines 35-36). Long83 fails to teach that the particulate polyimide is used in place of the fibrous polyimide.

However, Long63 teaches a molding composition containing LCP (column 6, lines 48-58) that can comprise polyimide as a filler, which has heat resistance and high strength (column 7, lines 27-29). Long63 teaches that the filler can be in either fibrous or particulate form, depending on the intended use of the material (column 7, lines 1-2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used particulate polyimide in place of the fibrous polyimide in the composition of Long83, in order to utilize the physical properties provided by the particulate form, to meet the intended use, as taught by Long63.

Long83 fails to teach that that the amount of LCP comprises at least about 65% by weight of the composition.

However, Maeda teaches a molding composition (column 1, lines 13-20), comprising LCP is present as the major component of the matrix resin, in the amount of 60 to 91% by weight when the filler is present (carbon fiber amount of from 10 to 70 parts by weight of liquid crystal polyester resin, column 5, lines 60-67), which overlaps the claimed range of at least about 65% by weight of the composition, for the purpose of providing the desired balance of lubrication and mechanical strength (plasticization, column 5, lines 60-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided the LCP in the composition of Long83, in an amount within the range of at least about 65% by weight, in order to obtain the desired balance of lubrication and mechanical strength, combined with excellent heat-resistance and processibility in the melt for precision molding, as taught by Maeda.

While Long83 teaches that the fillers may be used in combination of two or more in an amount within the range of greater than 0 to 60 % by weight of the composition (column 6, lines 39-41), Long83 in view of Long63 and Maeda, fails to teach that the (A) graphite is present in the composition in an amount of from 1% to about 10% by weight; that the (B) carbon fiber is present in an amount of from 1% to about 10% by weight; that the (C) mica is present in an amount of from 1% to about 5% by weight; and that the (D) particulate polyimide is present in an amount of from 1% to about 10% by weight.

However, Tsutsumi teaches a molding composition (abstract) comprising a liquid crystalline polyester (LCP) (polyester resin which is a thermotropic liquid-crystal polymer, column 4, lines 40-50) as a matrix material (polyester resin, column 3, lines 65-70); having an onset of melting temperature of at least 320°C (can form an anisotropic molten phase at a temperature of 420°C, column 4, lines 42-50). Tsutsumi teaches that the lubricating filler is present in the amount of from 1-25% by weight of the composition (solid lubricant include PTFE, graphite, is usually from 1 to 25 parts by weight of the sum of the polyimide resin and the thermotropic liquid crystal polymer, column 20, lines 27-40), wherein at least two lubricating fillers are blended together for the purpose of providing the desired combination of lubricating and physical properties (sliding properties, mechanical properties and dimensional stability of molded article, column 3, lines 18-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have optimized the process of making the composition

of Long83 in view of Long63 and Maeda, to obtain one comprising the LCP in the amount within the range of at least about 65% by weight; the (A) graphite in an amount of from 1% to about 10% by weight; the (B) carbon fiber in an amount of from 1% to about 10% by weight; the (C) mica in an amount of from 1% to about 5% by weight; and the (D) particulate polyimide in an amount of from 1% to about 10% by weight, in order to provide the desired combination of lubricating and physical properties, as taught by Maeda in view of Tsutsumi.

Finally, Long83 teaches that the LCP has repeat units of 4-hydroxybenzoic acid (p-hydroxybenzoic acid), 4,4'-biphenol, terephthalic acid and 2,6-napthalene-dicarboxylic acid (residues, abstract), disclosed by Applicant's specification (original claim 3). A chemical composition and its properties are inseparable. If the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. See MPEP 2112.01. Thus, the composition of Long83 as modified by Long63, Maeda and Tsutsumi, as discussed above, is expected to have a good wear resistance at conditions of at least 1.75 MPa-m/s (50,000 psi-fpm).

Allowable Subject Matter

6. Claims 11, 13 are allowed. The closest prior art US 5,312,866 or US 5,767,223, even in combination with each other and US 5,969,083, fails to teach or suggest the specific composition which comprises about 65 % by weight of liquid crystalline polyester material having an onset of melting temperature of greater than 320 °C, and contains four fillers wherein said fillers comprise (A) about 10 % by weight of graphite;

(B) about 10 % by weight of carbon fiber; (C) about 5 % by weight of mica; and (D) about 10 % by weight of particulate polyimide, wherein the composition has an onset melting temperature of at least 320 °C and wear resistance at conditions of at least 1.75 MPa-m/s (50,000 psi-fpm). Applicant demonstrates that the specific composition recited shows unexpected results in terms of wear resistance performance. See Applicant's specification (page 11).

Response to Arguments

7. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon

Sow-Fun Hon

12/26/06